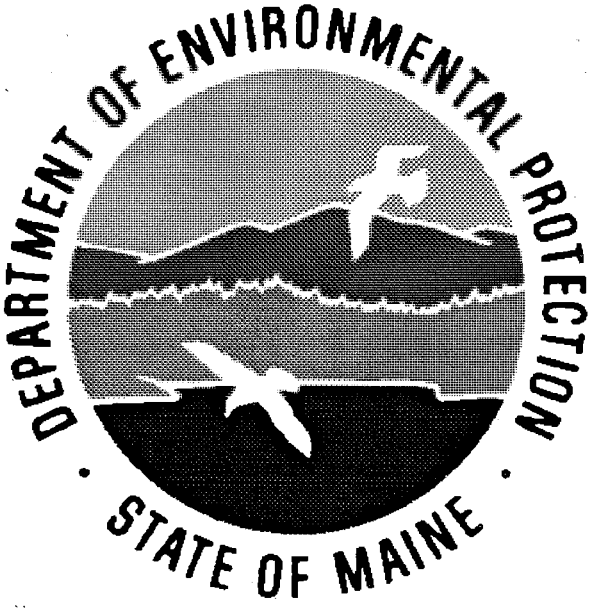
BUREAU OF LAND AND WATER QUALITY

FY 1994 ANNUAL REPORT



November 1994

This report attempts to provide a general summary of the programs that are the responsibility of the Bureau of Land and Water Quality. It is intended to be as much a report on the land and water resources we oversee, as it is a report on the Bureau itself. It is not a complete summary of everything we have done or are doing. Rather, it attempts to highlight major activities and significant findings, to provide general statistical information on environmental quality and bureau operations, and to describe our direction and focus.

"Science does teach us that everything is interdependent...

...[I]f we are to be effective..., we have to find workable techniques and programs that can be put into practice soon, tools for change that are easily grasped and understood, and that conform naturally to the landscape of human nature."

Paul Hawken

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I. MISSION STATEMENT

The Bureau of Land and Water Quality shall protect, restore and enhance land and water resources as ecological systems supporting both the natural world and human activities. Our charge is to prevent pollution, encourage conservation and reduce environmental risks. Our duty is to practice and promote stewardship of Maine's environment... in the present and for future generations.

Objectives

To promote stewardship of Maine's natural resources through partnerships with and among Maine citizens.

To consistently administer sound programs.

To routinely incorporate research and current data into program development and administration.

To promote compliance with environmental standards through education, technical assistance and equitable enforcement.

To continually evaluate and improve program effectiveness.

II. INTRODUCTION

A. Bureau Structure and Purpose

On January 1, 1994 the Bureau of Land Quality Control and the Bureau of Water Quality Control merged to form the Bureau of Land and Water Quality. The primary purpose of the merger was to jointly administer, under a common policy direction, programs governing land use practices that have direct impacts on water quality, and water quality programs. An increasing emphasis on habitat protection and watershed management requires coordination between protecting water resources and managing the land uses that affect them. The daily administration of land use regulatory programs needs to be put into context with the other tools available -- regulatory and nonregulatory -- for reducing risk to surface and ground water. This will enable a cohesive environmental program that is more efficient and effective.

To reflect the new direction of environmental programs -- a complementary mix of regulatory and nonregulatory approaches with a greater emphasis on planning -- the Bureau of Land and Water Quality is organized into five divisions: two regulatory divisions, a science division, a planning division, and a financial and technical assistance division. An organization chart is included in the Appendix.

- Water Resource Regulation. Mickey Kuhns, Director. This division is responsible for waste water discharge licensing, compliance and enforcement, operation and maintenance inspections of wastewater treatment facilities, overboard discharges licensing and inspections, and hydropower licensing.

- Land Resource Regulation. Jeff Madore, Director. This division conducts NRPA and Site licensing, compliance and enforcement. Many projects submitted to the DEP for review need both a Site and NRPA permit. Much has been done to coordinate these reviews; combining them within one Division further improves efficiency and helps us manage the highly fluctuating and unpredictable workload. The engineers and geologists that review site applications for stormwater, erosion and sediment control, and hydrogeology have been moved to the science and planning divisions to help strengthen technical decision-making.

- Environmental Assessment. Dave Courtemanch, Director. Environmental programs need to be grounded in sound science. This division's primary focus is on monitoring and assessing ground and surface water quality to provide the scientific foundation for the land and water programs, as well as on developing environmental indicators to evaluate program effectiveness. In addition, this division coordinates the Bureau's risk assessment efforts for the Maine Environmental Priorities Project.

- Watershed Management. Don Witherill, Director. This division is new to the DEP. The creation of this division reflects the view that ecosystems are interconnected and need to be managed in an integrated

fashion. This division includes programs on nonpoint source pollution management, shoreland zoning, watershed assessment and planning, technical assistance (engineering) and wetlands policy development. A critical function of this division is to work on watershed management collaboratively with other state agencies, and with local and regional entities.

- Engineering and Technical Assistance. Dennis Purington, Director. This division oversees grants and loans to municipalities for wastewater treatment funded by the Federal Government and through State bond issues, specifically: the state revolving fund, which provides loans to build and upgrade municipal sewage treatment facilities; overboard discharge and small community grants, and municipal grants; and provides technical assistance to industrial and municipal wastewater treatment facilities. The Bureau's pollution prevention activities are primarily overseen by this division.

- Central Services. In addition to the five divisions, there are three units that provide central services to the entire bureau: the clerical unit, the data management unit, and the policy and planning unit.

- Regional Staff. Shifting more staff to the regions over the last several years has lead to significant improvements in the delivery of services by placing staff closer to the public. The Bureau has staff positions in the Portland, Bangor and Presque Isle regional offices. Most of the regional staff are involved in land or water licensing, inspections, and enforcement. In addition, we have made a commitment to give the regions greater flexibility to better manage shifting workloads and to enable the Bureau to be more responsive to issues of regional significance.

The new bureau is designed to move land and water quality protection programs forward to enable us to address environmental protection through greater emphasis on planning, integration of regulatory and nonregulatory approaches, outreach and education, and a strong scientific and technical foundation.

B. Bureau Budget

In FY 1994 the Bureau had an operating budget of approximately $5.8 million. As seen from the pie charts in the Appendix, approximately half of the bureau's funding comes from the Federal Government (38% from U.S. EPA and 10% from NOAA), approximately 13% from licensing fees, and 39% from the General Fund. This funding mix has important consequences in terms of directing (and limiting) Bureau activities. One consequence is that often Federal priorities become more of a driving force than State priorities. For example, EPA (and Congress) are placing increasing emphasis on nonpoint sources, and federal funding in this area is increasing. However, the direction from the federal government is that these funds are to be spent on implementing management practices and not on assessment. If State priorities could be followed, more funds would be directed toward assessing problems to make sure our efforts are focused appropriately.

The General Fund and licensing revenues support minimum, "bare-bones" regulatory programs. Without Federal funding, all innovative activities -- particularly nonregulatory approaches -- would cease. Pollution prevention is entirely funded from the Federal Government; education and outreach and watershed management largely so.

It is also important to note the importance of our dependence on fees and how it directs program implementation. This is particularly significant in the land use permitting area. In some cases, approaches other than permitting may be more effective, yet our dependence on fees restricts us to licensing mechanisms to address such issues. In order to pursue these options we would need to find alternative funding sources.

C. Focus Groups

To complement the management structure outlined above, and to provide for coordination across divisions, we have created four focus groups around some areas that reflect our strategic direction. In addition to providing a means for staff to coordinate efforts across programs for greater efficiency, these groups also provide an important role in setting the Bureau's priorities in their area.

EDUCATION FOCUS GROUP

The group has four goals:

- Encourage staff to become an outreach team,
- Encourage people to want to protect the environment (Explain why protection is necessary),
- Enhance the ability of the general public and regulated community to protect the environment (Provide the tools to protect the environment), and
- Educate the decision makers of tomorrow.

The group has three objectives to reach those goals:

- To help the divisions identify and implement tasks that serve the four goals,
- To improve communication and coordination among divisions, and
- To suggest ideas and undertake projects.

Projects underway as of this writing include:

- Water Quality Monitoring Fair
- Environthon
- Earthday and other statewide and regional events
- Coordinating Earthminders, Partners in Environmental Education
- Presentations at schools, civic groups, municipal boards and committees
- Teacher training workshops
- Training workshops for local environmental officials
- Training for specific professional groups(e.g., loggers, contractors, and treatment plant operators)

- Pollution prevention workshops and training for industries and municipalities
- Publications on water quality issues, protection strategies, land use, and regulations

Education and outreach are involved in everything we do.

REGULATORY FOCUS GROUP

The primary focus of this focus group is to help ensure that the two regulatory arms of the bureau function efficiently together. This involves identifying commonalties and gaps that exist between the two programs in order to reduce duplication, prioritize common goals, and coordinate effort where possible. Once an issue is identified, the group forms teams, following total quality management principles, to further explore options and recommend solutions (a current example is the Logging Complaints TQ Team, whose purpose is to improve the state's response to logging complaints by eliminating areas of overlap of jurisdiction and by improving compliance through educational outreach.

SCIENCE AND TECHNOLOGY FOCUS GROUP

The Science and Technology Focus Group has completed the first phase of its work and has identified a number of ways to enhance the role of science and technology in various functions of the bureau. Recommendations fall into six general areas:

- Identifying priorities - strengthen the basis for establishing management priorities by greater utilization of scientific and technological information
- Forecasting environmental impacts - improve the bureau's ability to project environmental impacts, reducing reactive management
- Integrating scientific and technological knowledge inside and outside the DEP - encourage better communication between public and private resources
- Investing in science and technology - keep the bureau at the leading edge of scientific and technological developments
- Providing customer service - do a better job identifying our customers and their needs
- Evaluating the effectiveness of our programs - develop better feedback mechanisms to assess progress.

DATA MANAGEMENT FOCUS GROUP

Effective management of data is critical to the bureau for efficient day-to-day operations (for example, tracking the several thousand permit applications we process annually). In addition, governmental programs and the public at-large increasingly need high quality and readily available natural resources data in order to make effective decisions. The Data Management Focus Group (DMFG) was formed to determine the best means of providing uniform management of the numerous databases in the Bureau and technical support to staff for computer hardware and software use. The recommendation of the DMFG was that the Bureau form a Data Management Unit (DMU), which became effective in January,

1994. Since the creation of the DMU, the focus group has turned its attention to coordinating data-related activities within the Bureau's divisions and identifying and strengthening our abilities in new areas such as GIS. With representatives from each of the divisions, the DMFG provides a link between the DMU and the divisions, provides input for hardware and software needs; prepares purchasing and budget recommendations to Bureau Management; and will do periodic evaluations of the progress and effectiveness of the Bureau in serving internal and external data needs.

III. RESOURCE ASSESSMENT

A. OVERVIEW

This section of the report is organized by resource type: lakes, rivers, marine and estuarine waters, wetlands, groundwater. Within each section there is a general statement of the current status and predicted trends of the quality of each resource, and a list of FY 94 issues, activities and significant findings.

The Quality of Maine Waters[1]

The overall status of Maine waters, as reported in DEP's 305(b) Report to Congress, is summarized below:

- **Lakes**

  70.3% of "significant" Maine lakes (based on area) fully support designated uses, 5.3% fully support those uses but are threatened, and 24.4% partially support the uses. 75.6% of Maine lakes meet the GPA classification requirements established by State law. 24.4% do not.

  81.4% of "significant" Maine lakes (based on area) fully support the "fishable" goal of the Clean Water Act and 94.6% fully support the "swimmable" goal. The remaining 18.6% and 5.4% partially attain the "fishable" and "swimmable" goals, respectively.

- **Rivers**

  98.6% of all Maine rivers (based on length) fully support the uses designated by State law. 1.4% do not.

  98.8% and 99.6%, respectively, of Maine rivers (based on length) fully support the "fishable" and "swimmable" goals of the Clean Water Act.

- **Marine and Estuarine Waters**

  90.2% of all marine and estuarine waters (based on area) fully support the uses designated by State law. 2.2% partially support those uses, and 7.6% do not support the designated uses.

  90.2% of marine and estuarine waters (based on area) attain the "fishable" goal of the Clean Water Act. 2.2% partially attain that goal, and 7.6% do not. 99.8% of those waters attain the "swimmable" goal of the Clean Water Act, and 0.2% do not.

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[1]For a detailed assessment of Maine's waters, see *State of Maine 1994 Water Quality Assessment, A Report to Congress Prepared Pursuant to Section 305(b) of the Clean Water Act.* Me.DEP, 1994.

65.2% of the Maine coast with shellfish harvesting potential is open to harvesting.

- **Wetlands**

  Wetlands are important for a number of reasons. In addition to providing wildlife habitat; they improve water quality, protect downstream areas from flooding and help maintain stream flows during dry weather.

  Maine has approximately 5 million acres of freshwater wetlands. That equates to roughly 25% of its land area. It also has 160,000 acres of tidal wetlands.

  Not much evidence exists concerning historic loss of wetlands in Maine. Estimates vary from a high of 20% lost to a low of 1%.

  Maine regulates all of the tidal wetlands, wetlands contiguous to surface water, and floodplain wetlands. Isolated wetlands ten acres or more in size are also regulated.

- **Ground Water**

  Significant sand and gravel aquifers underly 1,315 square miles.

  More than 60% of Maine households draw their drinking water from ground water supplied from private wells, public wells, or springs. Groundwater is the source of approximately 98% of all the water used by households with individual supplies.

  Additional federal requirements for surface water treatment are increasing the shift to groundwater use for public water supplies. Generally, the ground water supply in Maine is adequate. The total withdrawal of ground water by all water users is less than one percent of the annual groundwater recharge each year. The remaining annual ground water recharge is lost through evapotranspiration or discharges to ponds, lakes, rivers, and streams.

  Approximately 60% of the water needed for Maine livestock is supplied by groundwater.

  Little is known about overall groundwater quality.

B. LAKES

Individual Use Support Summary
Significant Lakes and Ponds (acres)

Use	Supporting	Supporting, but Threatened[1]	Partially Supporting	Not Supporting
Fish Consumption	958,776	0		0
Aquatic Life Support [2]	723,112	57,589	178,075	0
Swimming	807,399	99,871	51,506	0
Secondary Contact	958,776	0	0	0
Drinking Water Supply	958,776	0	0	0

1 Size Threatened is not a sub-category of size fully supporting.
2 Use category includes propagation of fish, shellfish and wildlife.

1. General Assessment

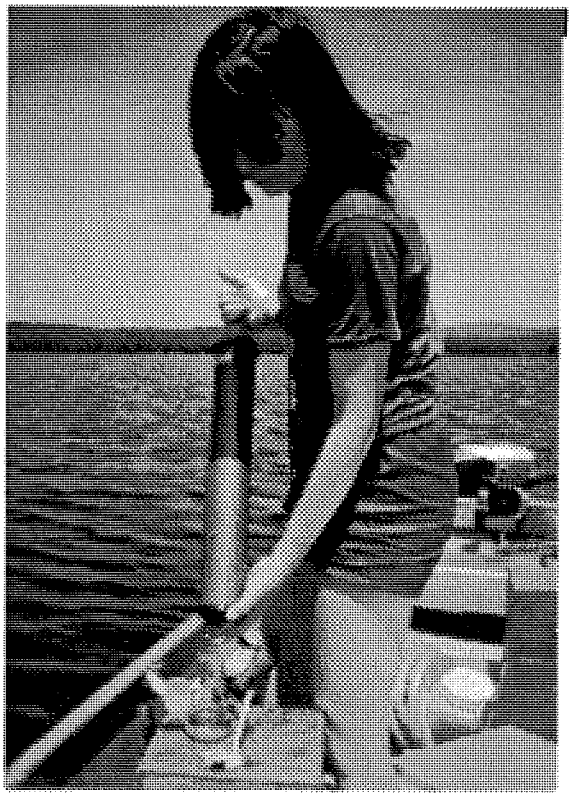
Analysis of lake water quality for the State of Maine 1994 Water Quality Assessment Report indicates that 75.6% of lake area fully supports designated uses. However, 5.3% of this area is considered threatened. The percentage of lake area only partially supporting designated uses has increased by 3.3% since the 1992 report, to 24.4%. This increase in the number of impaired lakes is primarily due to discovery of low dissolved oxygen in the bottom waters of a number of lakes that were sampled for the first time during the assessment period. Most likely, these lakes were impaired during previous cycles. The water quality of three monitored lakes declined to levels considered impaired. The primary cause of partial support of designated uses in Maine lakes continues to be organic enrichment from nonpoint sources of pollution such as urban runoff, agriculture and silviculture.

2. Major Findings, Issues, and Activities in FY 1994

a. Regional Environmental Monitoring and Assessment Program (REMAP) -- Mercury. Since the late 1970's high levels of mercury and other contaminants have occasionally been found in Maine fish, including those caught in remote, pristine lakes. Recent investigations of low reproductive rates in Maine eagle populations revealed unusually high concentrations of mercury and polychlorinated biphenyls (PCBs) in nesting eaglets. In 1993, DEP began a study to estimate levels of mercury, lead, cadmium, PCB's and selected pesticides in fish populations in the State's lakes to determine the potential risks to both ecological and human health. Fish, water quality data and sediment samples were collected from 127 randomly selected lakes distributed across Maine. A top predator species and an omnivore species were collected from each lake. Both fillets and whole fish were analyzed. Preliminary evaluation of the data indicates that fish composites from 65% of the lakes sampled contained at least 0.43 parts per million of mercury, which is **above** the level of concern for human consumption established by the Maine Department of Human Services. Fish composites from 9% of the lakes sampled had mercury levels greater or

equal to the Federal Food and Drug Administration action level of 1.0 part per million. The maximum fish composite mercury concentration measured was 2.5 parts per million.

As a result of these findings, the State of Maine issued a general fish consumption advisory in May 1994. Formal analysis of the data is currently underway. Factors affecting lake sensitivity to contamination, such as geography, geology, water and sediment chemistry, hydrology, trophic state and air flow patterns, will also be examined. The project is scheduled for completion in May 1995. *(Contact: Barry Mower)*



Lake Water Quality Monitoring

b. Volunteer Monitoring Program.[2] The state's Volunteer Monitoring Program (VMP), one of the oldest in the country, is celebrating its 20th year of citizen-assisted water quality data collection. Transparency data is collected by volunteers on the 300 lakes in the program and dissolved oxygen data is collected on approximately 25 lakes. The VMP also provides an important lake water quality education function and establishes an informal liaison between DEP and the local community. In 1992, the State Legislature cut the funding for the Lakes Restoration and Protection Fund, the sole source of state funding for the VMP. In response, the DEP entered into an agreement with the Congress of Lake Associations (COLA), a non-profit organization, to assist in the management of the VMP. DEP continues to provide data management and technical assistance with COLA taking on the day-to-day administrative aspects of the program. The program has also begun to decentralize through training of volunteer regional coordinators and keypunchers that provide local assistance to volunteers in the program. This year's focus was to conduct quality assurance, quality control workshops to retrain all volunteers ensuring collection of quality data. In addition, a test project was conducted on five lakes to determine the feasibility of training volunteers to collect additional data. *(Contact: Web Pearsall)*

c. Sebago Lake. Sebago Lake is a significant environmental resource and one of the most highly-valued multiple-use lakes in the State. During the past several years, many complaints have been voiced about the effect of lake levels on the quality of the lake water and its many public and

[2]Volunteer monitoring of marine waters is managed by the State Planning Office's Shore Stewards Program, and is funded by a grant from NOAA under the Coastal Zone Management Program.

private uses. Water levels on Sebago Lake continue to operate under a management plan developed by DEP, and voluntarily implemented by S.D. Warren, in 1991 and modified in 1992. This plan was designed to achieve a reasonable balance among the often competing uses of the lake. This year, the bureau developed guidance for dredging existing marinas on Sebago Lake, in response to marina owners' concerns with the impacts from established water levels. The owner of the lake outlet dam (S. D. Warren) is currently under orders to develop a lake level plan that will become part of the federal license for the project. The appropriate level for the lake remains highly controversial. *(Contact: Dana Murch)*

d. Great Ponds. The Department is pleased to report that by the end of June of this past year, virtually all of Maine's great ponds were provided greater protection as a result of the municipalities' adoption of new shoreland zoning standards. Upgraded standards, as contained in the Department's State of Maine Guidelines for Municipal Shoreland Zoning Ordinances, include a 100 foot vegetated buffer strip and a 100 foot setback requirement for new structures. Among other standards, the Guidelines better address nonpoint source issues such as erosion control, road and driveway construction, timber harvesting and agricultural activities. The main objective of the new standards is to protect water quality, particularly on Maine's valuable, but fragile, inland ponds. The Department has also been actively working with the Great Ponds Task Force, an interagency workgroup, to improve integrated management of our lake resources. *(Contact: Roy Bouchard)*

C. RIVERS

Individual Use Support Summary
Rivers, Streams and Brooks (linear miles)

Use	Supporting	Supporting, but Threatened[1]	Partially Supporting	Not Supporting
Fish Consumption	31,461	0	211	0
Aquatic Life Support [2]	31,508	0	0	164
Swimming	31,597	0	0	75
Secondary Contact	31,597	0	0	75
Drinking Water Supply	0	0	0	0
Agriculture	31,672	0	0	0

1 Size Threatened is not a sub-category of size fully supporting.
2 Use category includes propagation of fish, shellfish and wildlife.

1. General Assessment

Maine continues to make improvements in the quality of its river and stream resources. The overall percentage of waters which do not attain their uses is small. However, this does not adequately portray the condition of some waters. Segments of major rivers account for the greatest share of miles

which do not attain their uses. Dioxin contamination continues to limit uses of many river miles. Discharges from combined sewer overflows also impair many river miles. The State has made continuous progress in treating point sources of pollution and reducing the number of miles impacted by these discharges. Detracting from those achievements, however, are a number of new segments which have been identified as not attaining their use due to nonpoint sources of pollution. Progress toward reducing those sources has not been as effective. However, a number of new initiatives are targeted at reducing nonpoint sources.

2. Major Findings, Issues, and Activities in FY 1994

a. Industrial Pollution Prevention. DEP has established pollution prevention teams with four pulp and paper mills in Maine: International Paper, Jay; Boise Cascade, Rumford; S.D. Warren, Hinckley; and Scott Paper, Winslow. Through these teams, DEP and paper mill staff work through a collaborative process to identify operational changes to reduce pollution generated and reduce the cost to the mill. There have been some dramatic results.

The International Paper, Jay pollution prevention team established in the fall of 1991, was the first of these collaborative efforts. The most notable results of this program was the dramatic improvement of the waste treatment system performance. The biochemical oxygen demand (BOD) has been reduced over 65 percent as shown in Figure 1. During FY94 this team evaluated the generation and release of methanol. The team has also been responsible for an important change in the bleaching process. Oxygen delignification will become operational in 1994. This change will reduce many air and water pollutants.

A new multi-media pollution prevention team was established at Boise Cascade in the spring of 1993. The team conducted a facility site-assessment and identified the use and release of toxic chemicals as its focus. Sub-teams worked on evaluating the alternative uses of fly ash, spill prevention, and optimization of the effluent treatment process. Figure 1 shows a 30 percent reduction in BOD since the project was started.

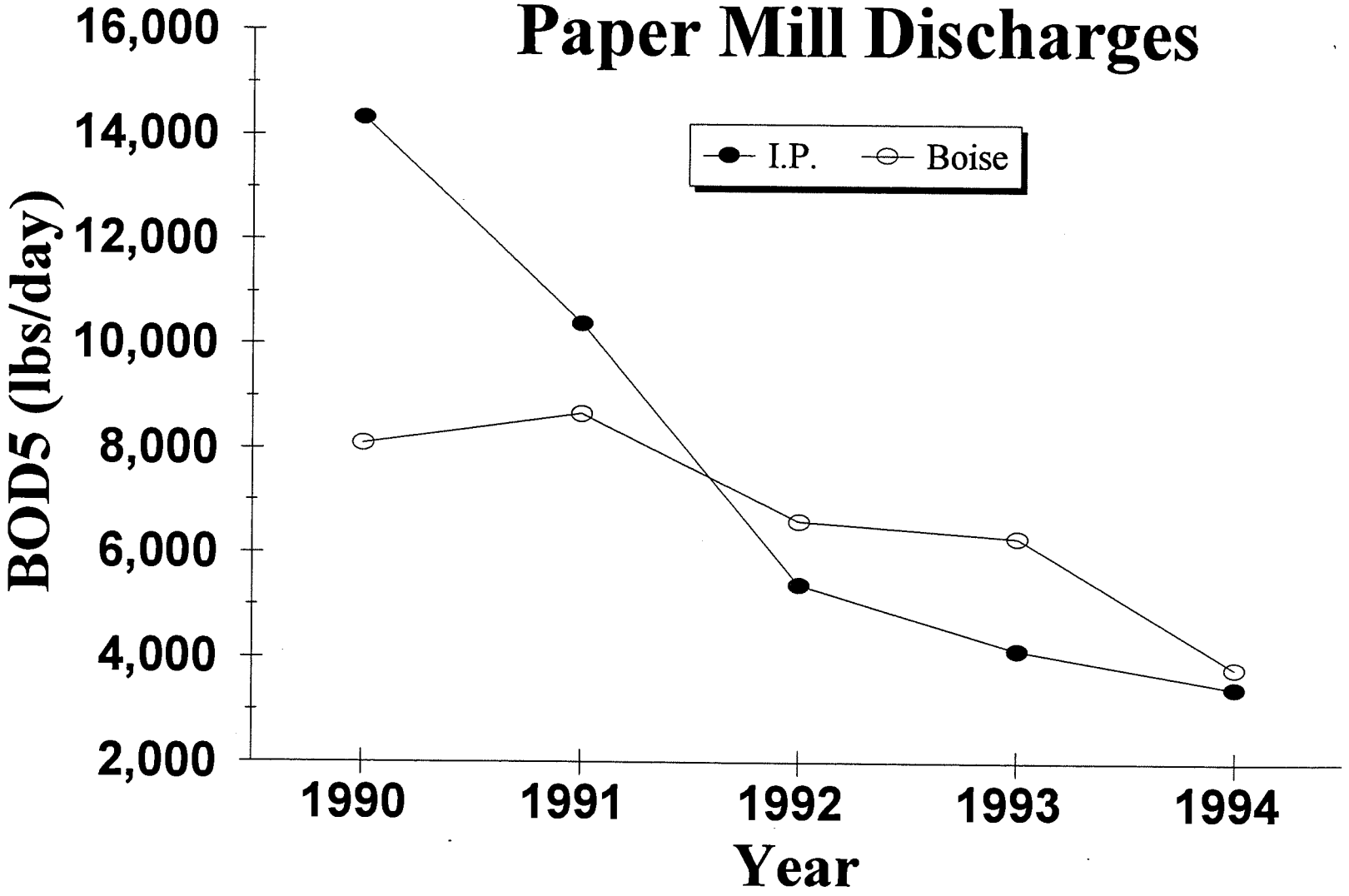
The Scott Paper Company/DEP team was established in the spring of 1994 and has begun work on evaluating the facilities' boiler feedwater demineralization system. The project is currently being divided into a number of subparts in order to be able to work more efficiently toward the goal of reducing the amount of make up water that is required.

The S. D. Warren/DEP Team is working to reduce the secondary solids carryover to the polishing pond. The team has identified design, operational, maintenance and administrative factors that limit performance. Special causes were identified using statistical process control. In addition several special studies and trials were conducted to gather pertinent data and information.

In 1994 the Bureau produced a technical assistance document entitled *Your Maine Source: A Pollution Prevention Primer for Pulp and Paper Mills.* Produced with input from the seven kraft pulp and paper mills in the state,

Androscoggin River Basin

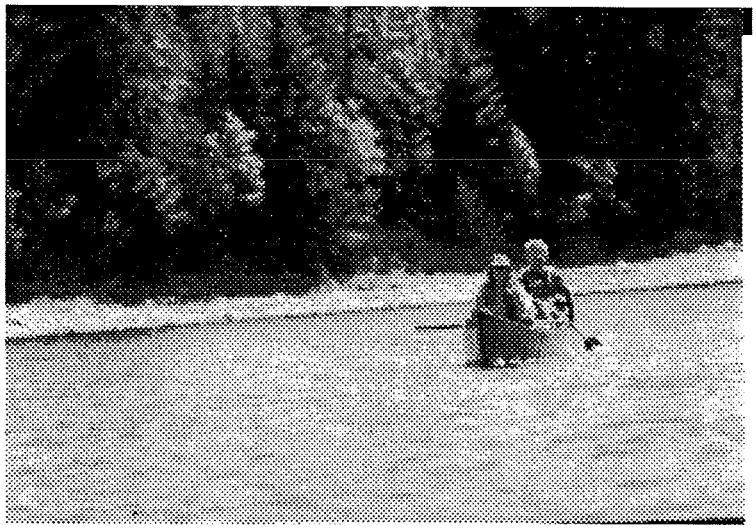
Paper Mill Discharges



this publication contains information on the various pollution prevention projects that each mill has undertaken. It also includes examples of the DEP working in conjunction with industry using pollution prevention teams to investigate economical and environmental enhancement opportunities. These teams use Total Quality Management principles and tools to properly evaluate and prioritize suggested projects. One of the major goals of this Primer was to promote technology transfer among these facilities. *(Contact: Don Albert)*

b. Municipal and Industrial Pollution Prevention: the Androscoggin Watershed Pollution Prevention Initiative. The goal of the Androscoggin Watershed Pollution Prevention Initiative is to prevent and reduce pollution and the total volume of wastewater and pollutant loads through technical assistance and educational outreach on pollution prevention methods and technologies. The DEP is doing this by functioning as a "catalyst" to bring local municipalities and industries together to identify goals and objectives for the river, through establishing teams with the towns abutting the watershed (Lewiston/Auburn; Livermore Falls/Jay; Lisbon; Sabattus; Norway; Bethel; Rumford/Mexico; Brunswick; and Paris). It is hoped that this approach will serve as a model for efforts in other watersheds.

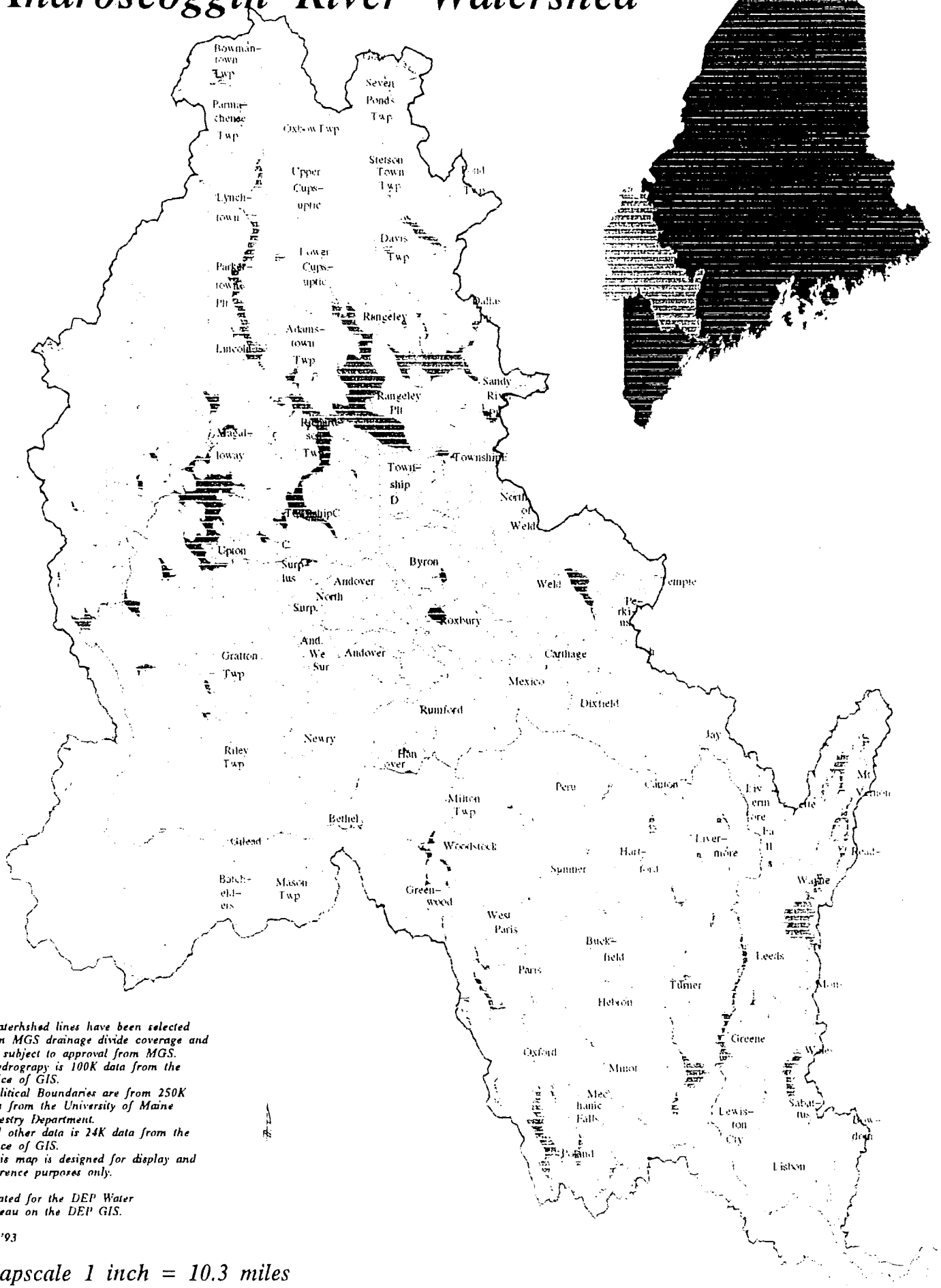
In FY 1994, the New England Interstate Water Pollution Control Commission received a grant from USEPA to fund a coordinator for the Androscoggin Project at the DEP for two years. *(Contact: Don Albert)*



Allagash

c. Municipal Treatment Facility Grants and Loans. Sixteen wastewater treatment facility projects funded by state grants and State Revolving Fund (SRF) loans were completed and commenced operation during FY 94. The sixteen communities expended $97,735,000 to complete the projects. The projects consisted of upgrades to wastewater treatment facilities such as Bangor, Farmington, Kittery, Mars Hill and York to new wastewater treatment facilities and new sewer systems such as Eastport, Lubec, Norridgewock, Patten, Peaks Island in Portland, Rockport and Stonington. A list of the communities and the waterbodies cleaned up are listed in Appendix.

Androscoggin River Watershed



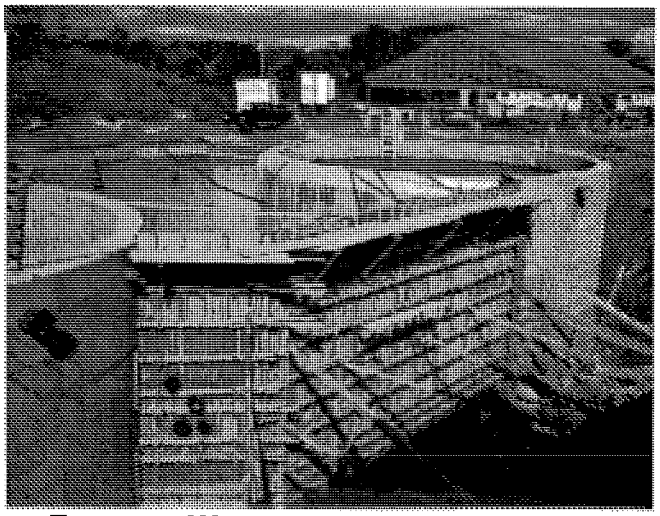
**Waterhshed lines have been selected from MGS drainage divide coverage and are subject to approval from MGS.*
**Hydrograpy is 100K data from the Office of GIS.*
**Political Boundaries are from 250K data from the University of Maine Forestry Department.*
**All other data is 24K data from the Office of GIS.*
**This map is designed for display and reference purposes only.*

Created for the DEP Water Bureau on the DEP GIS.

vls '93

Mapscale 1 inch = 10.3 miles
Total Drainage Area = 3500 square miles

Six grants totaling $3,100,862 were given to municipalities to design and construct wastewater treatment facilities and sewer systems. The grants were used to supplement federal grants from the Farmers Home administration (FmHA) and the Environmental Protection Agency. Lubec, Eastport, and Stonington now provide primary treatment before discharging to the ocean. Peaks Island treatment facility provides secondary treatment before discharging to the ocean. Mars Hill upgraded from primary to secondary treatment with a seasonal discharge to the Prestile Stream. Norridgewock built a new secondary treatment facility to replace individual treatment facilities and malfunctioning systems. Patten started operating a zero discharge, land application system and the Mere Point project replaced existing licensed discharges with subsurface disposal systems. St. Agatha removed their discharge from Long Lake and now discharges to the St. John River. All the above projects were funded through the construction grants program including EPA, FmHA, and State Bond Issue funds.



Eastport Wastewater Treatment Plant

Eight State Revolving Fund (SRF) projects totaling $15,129,959 were funded for seven municipalities for construction of wastewater treatment facilities. The SRF projects that began operations include the upgrades of the Kittery and Farmington wastewater treatment plants. These upgrades were necessary to accommodate growth in the towns and to ensure water quality standards would be met.

Seventy-three municipalities received Small Community Grants totaling $984,783 in FY 94. The grants are given to municipalities all over the State to eliminate untreated and unlicensed discharges to the state's waters where there is not a sufficient concentration of discharges to justify a sewerage system. The grants are used to allow the discharges to comply with State Plumbing Code for subsurface disposal systems. The list of communities and grant amounts are listed in the Appendix.

In November 1993 a $12,000,000 Bond Issue for Municipal Wastewater Treatment Facilities was approved by the voters. The bond issue provided $4,000,000 for the State Match for the Federal Capitalization Grant for the State Revolving Fund, $1,000,000 each for Small Community Grants and Overboard Discharge Elimination grants and $6,000,000 for Fort Kent, Rangeley

and Thomaston for new treatment facilities to eliminate the existing inadequate treatment facilities. Approximately 200 individual septic systems have been installed through the Small Community Program in 1993 and 27 individual overboard discharges have been replaced with septic systems or connections to public sewers through the Overboard Discharge Program.

Combined sewer overflows -- which discharge untreated human and industrial wastewater, mixed with storm water, during rainstorms -- continue to be a serious and costly environmental problem. USEPA and the DEP have developed policies and guidance toward a planning effort to achieve cost-effective CSO controls that ultimately meet public health and environmental objectives. CSO controls are very expensive and lengthy to complete. In FY 1994, 30 Combined Sewer Overflow Facilities Plans were submitted to DEP for review. During FY94, eleven CSO grants were given to municipalities to prepare "Master Plans" to abate the combined sewer overflows in their communities. The DEP provided 25% grants to aid the communities in preparing the plans. The list of communities and grant amounts are listed in the Appendix. *(Contact: Dennis Purington)*

d. Hydropower: Basin Mills. In 1990, Bangor Hydro-Electric Company filed an application to (1) expand the existing Veazie Project, (2) construct the new Basin Mill Dam and powerhouse, and (3) decommission the existing Orono Project, all located on the Penobscot and Stillwater Rivers. The Board of Environmental Protection subsequently held extensive hearings on the project, which adjourned in February of 1993. On November 10, 1993, the Board approved the project with conditions requiring that sea-run fish be trapped and trucked around the new dam, that state-of-the-art fishways be installed at the Veazie Dam, and that a $5 million trust fund be established to finance Atlantic salmon management activities on the river. The Board's decision was appealed to Superior Court, which, on September 2, 1994 issued a decision upholding the Board's approval. *(Contact: Dana Murch)*

e. Basin Approach to NPDES Permitting. EPA and DEP are undertaking an initiative to move to a watershed approach for NPDES permitting. This will be accomplished by dividing the State into five watersheds, and, following a five-year cycle, issuing all the permits within each watershed in the same year. This will enable us to focus our ambient water quality information collection and field work, and enhance our ability to manage the watershed as a whole. We estimate that it will take two five-year cycles to fully achieve our objectives and get all major dischargers on this cycle. The order of the watersheds are:

1994: Androscoggin
1995: St. John & Presumpscot
1996: Saco / Salmon Falls
1997: Penobscot River and Coast, Union River South and West
1998: Kennebec & Coastal to Penobscot River
(Contact: Mickey Kuhns)

D. COASTAL, MARINE, AND ESTUARINE AREAS

Individual Use Support Summary
Estuarine and Marine Waters (estimated acres and square miles)

Use	Supporting	Supporting, but Threatened[1]	Partially Supporting	Not Supporting
Shellfish (Acres)[2]	180,000	0	2,000	89,000
Aquatic Life Support (Square Miles)[3]	1,475	0	36	122
Swimming (Square Miles)[4]	1,630	0	0	3

1 Size Threatened is not a sub-category of size fully supporting.
2 Acreage estimated by the Maine Department of Marine resources.
3 Use category includes propagation of fish, shellfish and wildlife.
4 Use category includes recreation in and on the water.

1. General Assessment

There is a scarcity of information regarding coastal water quality at a scale useful to resource management. In 1988, a long term Marine Environmental Monitoring Program was funded by the Maine Legislature. In 1989, *Maine's Marine Environment; A Plan for Protection* was presented to the 114th Legislature. By 1991, however, budget cuts had eliminated all state funding and assessment has only continued through federal programs and grants. Nevertheless, we are systematically but slowly making progress in our understanding of the impacts of certain upland and coastal activities. Issues of concern for marine water quality may be grouped into five categories: toxic contamination, habitat degradation, nutrient enrichment, pathogen contamination and system dynamics and processes.

2. Major Findings, Issues and Activities in FY 1994

a. Aquaculture. In a cooperative project with the Department of Marine Resources and the Bedford Institute of Oceanography, we evaluated environmental impacts associated with salmon pen culture, a coastal activity holding great economic potential for an economically depressed area of Maine, but where the environmental impacts were unknown. Lack of monitoring data had contributed to regulatory indecision, permitting delays and increased costs to both business and government. As a result of this work, we developed a predictive model that justifies regulation and monitoring of the industry at a level proportional to probable environmental risk. In general, we found that bottom degradation associated with pen culture does not pose a significant risk to the marine ecosystem, and impacts tend to be restricted to within meters of the pens. Our experience also enabled the various state and federal regulatory agencies to agree upon a streamlined permitting process. (Aquaculture activities only need a submerged lands lease from DMR, and do not need a permit from DEP.) Water column impacts such as local eutrophication have not yet been addressed. *(Contact: John Sowles)*

b. Phase I of a Long-term Monitoring Strategy for Toxic Contaminants was completed in 1994. Assessing natural variability of heavy metals in blue mussels has been the focus of this effort since 1989. Through a combination of federal funding sources, this year we completed our original goal to describe the range of metal concentrations in blue mussels beyond which we consider anomalous. With these values, Maine is now in a position to begin managing its coastal resources based on regional data rather than perception. A similar study is needed for toxic organic compounds. Further understanding of accumulation at different trophic levels, pathways, and alternate assay tests are a high priority for future work. The Ambient Toxics Monitoring Program, if funded, will contribute to filling these needs. *(Contact: John Sowles)*

c. Lobster Tomalley. In February 1994 the DEP, DMR and the Bureau of Health (DHS) issued a health advisory for lobster tomalley, due to finding levels of dioxin that exceeded the Bureau of Health's recommended maximum concentrations for the protection of public health. The dioxin was discovered through tests conducted under the Dioxin Monitoring Program, established by the Legislature in 1988, which requires the DEP to sample fish once a year below no more than 12 facilities (bleached pulp mills and municipal wastewater treatment plants) once each quarter. The sampling and analysis are funded through fees assessed on the selected facilities. *(Contact: Barry Mower)*

d. Coastal/Nonpoint Program. Section 6217 of the Coastal Zone Amendment and Reauthorization Act (CZARA) requires states to develop and implement a nonpoint source control program in the coastal zone. This Act goes beyond the requirements of the Federal Clean Water Act Section 319 nonpoint program, which is voluntary, by requiring the coastal States to put in place enforceable policies and mechanisms to ensure the implementation of specific management measures developed by NOAA and EPA. DEP has been working with the State Planning Office to address the requirements of 6217. In February, 1994, we presented a first cut statement of how the state would meet these requirements of the Act, called a threshold review, to NOAA and EPA. We have also begun a number of data gathering and evaluation projects to support the development of the plan. We plan to amend and expand the state's Nonpoint Source Program to address these issues, rather than developing a separate program for the coastal zone. Maine is required to submit a formal program in July 1995. Failure to meet program requirements will result in reduced funding for both Maine's Clean Water Act 319 program and the Coastal Zone Management program. *(Contact: John Sowles)*

e. Dredge Management. Dredging and dredged material management have come to the forefront over the past year, as government agencies and private individuals attempt to deal with a complexity of issues. Much is still unknown about the impacts of dredging and disposal on the marine environment. The need for restricting the timing of dredging projects to minimize impacts on fisheries and other marine organisms is an issue that needs particular attention and further study. In addition to the processing of permits for both private and federal dredging projects, the DEP has been participating with other agencies in efforts to identify and resolve dredging issues. Activities during FY '94 include: development of a draft testing protocol for testing of dredged materials to be disposed of in open waters, anticipated to be finalized by the fall of 1994; participation in monthly coordination meetings throughout 1993 and

early 1994 in conjunction with the development of the U.S. Army Corps of Engineers' sponsored study entitled A Dredged Material Management Study for Coastal Maine and New Hampshire, published in July 1994; participation on the Dredging Subcommittee of the Marine Policy Committee of the Land and Water Resources Council regarding dredging issues; and attendance at a U.S. Army Corps of Engineers / Environment Canada workshop in Halifax, Nova Scotia in December, 1993, to discuss ocean disposal issues related to dredging projects in the Gulf of Maine. *(Contact: Jeff Madore)*

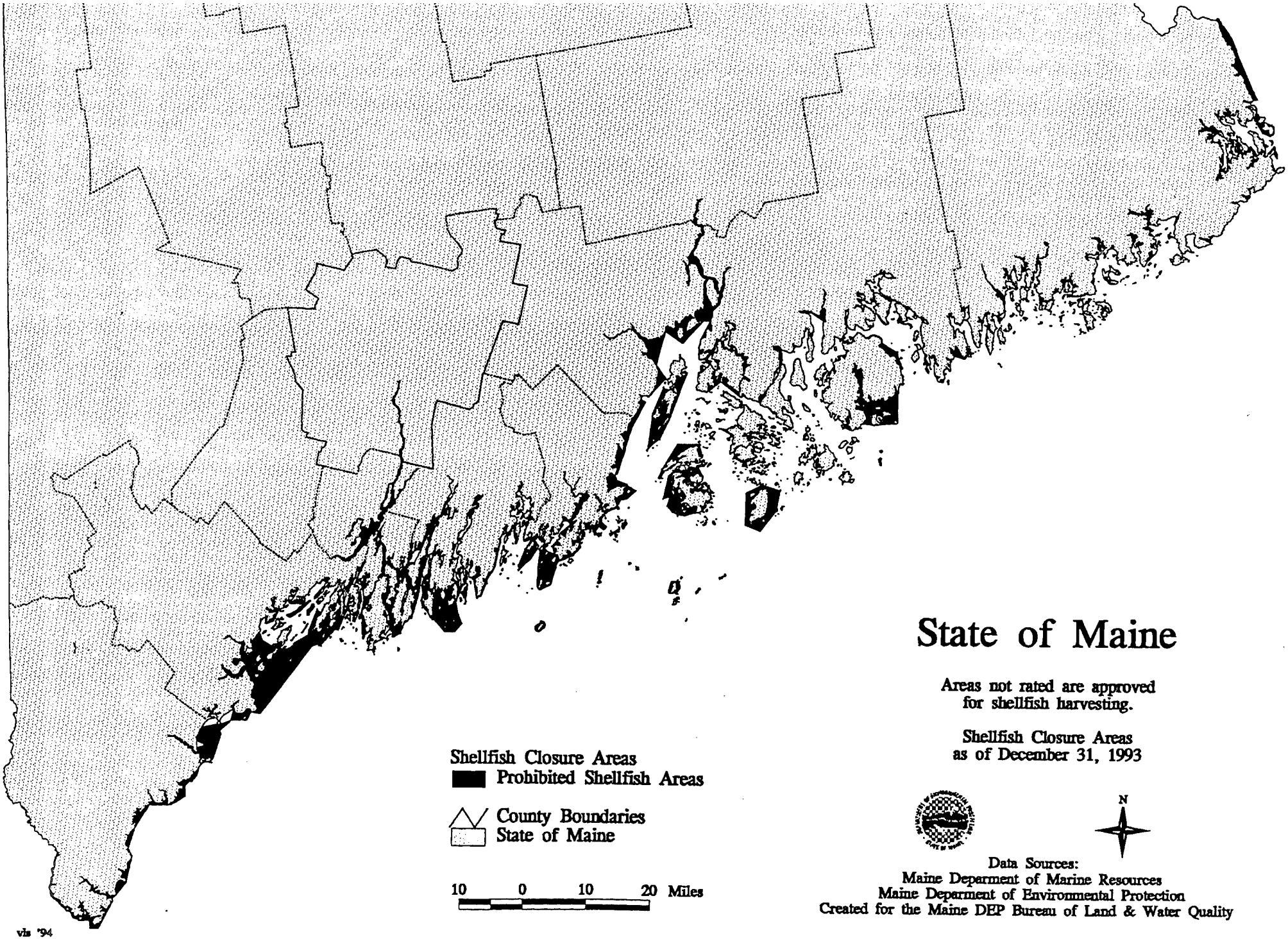
f. Gulf of Maine Council on the Marine Environment. The DEP and the State Planning Office are the Maine representatives to the Council, which includes environmental agencies from the other jurisdictions that abut the Gulf of Maine: Massachusetts, New Hampshire, New Brunswick, and Nova Scotia. The Bureau continued its leadership of the Council's environmental monitoring and research efforts that include *Gulfwatch* . We also contributed to the development of a marine research and monitoring data and information strategy and continue to participate in the actual testing of the evolving system that provides easy access to scientific information for resource managers and policy makers. Our upcoming priority is to identify a complementary ecological indicator that may be jointly monitored by the Gulf states and provinces. We also participated in the Council's Conference held in Nova Scotia in August 1994 to review the 10-year plan at the 5-year mark.

Beginning in the spring of 1994, we laid the foundations for a new coastal initiative that will assess the potential for degradation to coastal water quality by nutrient enrichment. Funding from the Coastal Zone Management Act Section 6217 enabled us to collaborate with Marine Environmental Assessment Corporation, the Wells Estuarine Research Reserve and the University of Maine Department of Oceanography. A three phase, 10-year strategy to construct a predictive model of enrichment vulnerability was developed. Phase I was completed in 1994. Funding and in-kind services have been partially secured for Phase II to begin in 1995. *(Contact: John Sowles)*

g. OBDs -- Shellfish Beds. Many of the shellfish areas along the coast are closed due to the presence of wastewater discharge pipes from residences, called Overboard Discharges (OBDs). The licensing program works closely in support of the OBD removal program, which coordinates funding for targeted coastal areas for the elimination of these discharges. The licensing program requires licensees to demonstrate that no possible practical alternative exists to the discharge.

The Maine Overboard Discharge Grant Program was initiated by the Legislature in 1989 (38 M.R.S.A., § 411-A) to help fund replacement systems that would eliminate licensed overboard discharges in certain areas. High priority is given to funding replacement systems in shellfish areas that could be opened for harvesting if the licensed overboard discharges were eliminated. High priority is also given to great ponds and small rivers and streams where the licensed overboard discharge creates a public nuisance condition. A total of 3.5 million dollars has been approved for use in the OBD program as part of previous bond issues.

In FY94, 31 grants were made to the following communities - Addison, Bar Harbor, Beals, Boothbay, Brooklin, Brooksville, Calais, Cumberland, Deer Isle, East Boothbay, Edgecomb, Franklin, Freeport,



State of Maine

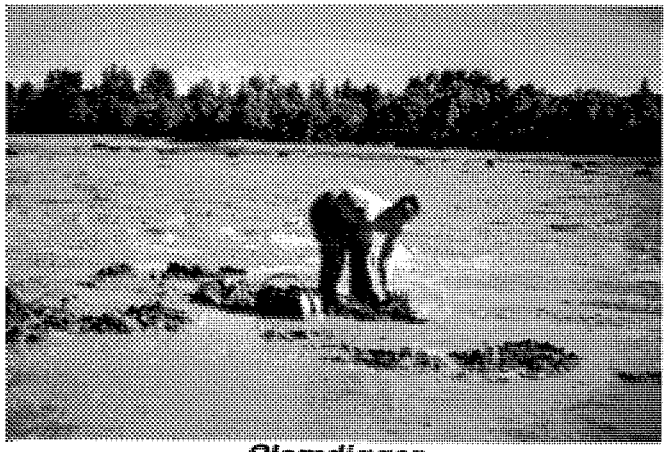
Areas not rated are approved for shellfish harvesting.

Shellfish Closure Areas
as of December 31, 1993

N

Data Sources:
Maine Deparment of Marine Resources
Maine Deparment of Environmental Protection
Created for the Maine DEP Bureau of Land & Water Quality

Gouldsboro, Harpswell, Islesboro, Machiasport, Milbridge, North Haven, Penobscot, Perry, Phippsburg, Piscataquis County Commissioners (Kokadjo), Robbinston, Stuben, Stonington, Sullivan, Surry, Trenton, Vinalhaven, Yarmouth. The total amount of these grants made in FY 94 is $918,247. The grants will eliminate licensed overboard discharges to 61 different shellfish areas plus the Roach river, a tributary to Moosehead Lake. Doughty Cove in the Town of Harpswell was reopened to shellfish harvesting during FY 94 and work continues on the other shellfish areas to reopen them to harvesting. The table in the Appendix shows the amount of the grant made to each town. *(Contacts: Dave Achorn (Grants); Pam Parker (licensing))*



Clamdigger

h. Shoreland Zoning. 448 of Maine's 450 municipalities have upgraded their local shoreland zoning ordinances consistent with the Department's guidelines. Along coastal Maine, only one town has yet to provide the Department with an updated ordinance that sufficiently addresses its shoreland areas. The remaining coastal communities have satisfactorily amended their shoreland ordinances. With the updated ordinances municipalities are better prepared to deal with nonpoint source and wildlife protection issues, and the conservation of the natural beauty along our coastal waters. *(Contact: Rich Baker; Dan Prichard)*

E. WETLANDS

1. General Assessment

Of all our natural resources, our wetlands are the most diverse. They vary widely in their location and appearance, and function in a variety of ways. They provide habitat for many fish and wildlife species, including a number that are threatened or endangered in the State of Maine; they help protect property from flooding, and maintain stream flows in drier months; and they help maintain water quality.

Maine has been blessed with both a wide diversity and an abundance of wetlands, as many as 5,000,000 acres. These wetlands receive limited protection from the Federal Clean Water Act, Section 404; the State Natural Resources Protection Act; the Mandatory Shoreland Zoning Act; and in some instances local wetland ordinances.

2. Major Findings, Issues and Activities in FY 1994

a. State Wetlands Conservation Plan. The State Planning Office is coordinating the development of a State Wetlands Conservation Plan using a CWA Section 104(b)(3) grant. DEP is assisting SPO with this effort and is a member of a 20+ member task force to oversee the development of the plan. A sub-group of this task force is studying the feasibility of assuming the federal 404 wetlands permit program (see below). Other work groups have been formed to evaluate wetlands mitigation, acquisition, inventories, and public outreach/education. *(Contact: Don Witherill)*

b. Wetlands Data Tracking Using GIS. The DEP has received an EPA 104(b)(3) grant to use the Geographic Information System (GIS) to track wetlands data acquired through its regulatory program. The DEP collects a large amount of data from individual applications for permits. Currently, this information is used for the review of the individual project, then it is filed away and eventually sent to be archived. The information is, therefore, not available for daily use, and it contributes nothing to the State's information base. Included in these applications are soils information, wetland delineations, survey data including contour lines, and stream locations. The information collected and stored in the GIS will be used in a variety of ways. It will allow the Department to assess the cumulative impacts of alteration activities that are permitted. It will allow the Department to more quickly compare decisions on past projects to current proposals, thereby reducing the potential for inconsistency. It will assist the Department in implementing a compliance tracking program by flagging projects that should be targeted for inspection. It will also help the DEP evaluate how activities throughout the watershed are affecting wetlands. This latter use of the information will be coordinated with local, regional, and state entities through the Division of Watershed Management. *(Contact: Kathy Jensen)*

c. Evaluation of Maine's Wetland Classification System. In July 1992 the Department received an $82,000 grant to evaluate Maine's Wetland Classification System. Evaluation efforts are focusing on the following three questions: 1) Are Class 1 wetlands functionally more important than Class 2 wetlands, which in turn, are more valuable than Class 3 wetlands; 2) Are regulated wetlands functionally more valuable than non regulated wetlands; 3)

Based on DEP-issued wetland alteration permits issued since 1990 (when the Chapter 310 Wetland Rules were adopted), which wetland functions have been impacted to greatest extent? Answers to these questions will provide insight into whether Maine wetlands are receiving an adequate level of protection under the existing program. A few key tasks that are being undertaken in an effort to answer these questions include:

- Development and implementation of a wetland loss tracking program, which monitors wetland impacts associated with DEP's wetland permitting process.

- Approximately 200 wetlands, representing each DEP wetland class, various wetland sizes, and vegetative cover types have been evaluated for 14 wetland functions, using the "Method For The Comparative Evaluation of Nontidal Wetlands In New Hampshire."

Wetland assessment work will be completed by late summer 1994. Data analysis will continue into early winter and a final report is expected to be completed by January 1995. Based on the results of the study, recommendations will be developed for management to revise Maine's wetland regulations to ensure an effective wetland protection program. *(Contact: Francis Brautigam)*

Wetlands, Berwick

d. Wetlands Mitigation Banking. One trouble spot in the area of wetlands protection has been road and highway construction, improvements and expansion. Many roadways abut wetlands, and safety improvements to the road will require filling in a portion of an adjacent wetland. Unlike development projects, transportation projects usually cannot work around the wetland or relocate to an upland site. Compensation on a site by site basis for the loss of these wetlands has been found to be quite costly and technically difficult, and in may cases would result in only marginal benefits to the state's wetland resources. Recognizing this, the DEP and the Maine Department of Transportation (MDOT) have been working together to evaluate wetland mitigation banking as a compensation option for transportation projects. Currently a study funded by MDOT is being conducted by a consultant. The study focuses on an evaluation of the current costs of wetland compensation to determine if changes in MDOT's compensation development process need to be

made. Depending on the results of the study, a pilot mitigation banking project may be developed. *(Contact: Bill Lafamme)*

e. Public Education. Unlike many environmental programs that are primarily directed to businesses and municipalities, the Natural Resources Protection Act affects a broad cross-section of the general public engaged in activities around their residences that may impact natural resources. In many ways, a good education and outreach effort to inform people of the impacts of these activities and what can be done to avoid them can be more effective in protecting the environment than a permit program on its own.

Recognizing this, in 1993 the DEP requested and was awarded a 104(B)(3) Wetlands Protection Grant to develop a public education and outreach program for the Natural Resources Protection Act (NRPA). The purpose of the grant is to develop materials to help the public understand the value of the resources protected by the NRPA and what they can do to safeguard these resources. A major component of the program is the development of outreach materials consisting of an NRPA Citizen's Guide, six issue profiles based on the guide and a modular slide show on the various protected resources (great ponds, coastal wetlands, sand dunes, freshwater wetlands and rivers, streams and brooks). It will also include a module on resource and watershed protection. A second component of the grant includes the development of a staff training strategy and schedule to ensure that staff are successful in public education and outreach efforts. This training strategy consists of identifying areas of training need and scheduling sessions for staff. *(Contact: Bill Laflamme)*

f. 404 Assumption. Currently, most applicants for project that would alter a wetland have to get two permits, one from the DEP and one from the US Army Corps of Engineers, subject to USEPA veto authority, under Section 404 of the Federal Clean Water Act. In 1993, the Maine Legislature passed a Resolve which requires the DEP in conjunction with the Maine State Planning Office (SPO) to form a work group to study the feasibility of applying to assume the federal wetlands 404 program. The agencies must report to the Legislature no later than February 1, 1995, and must include recommendations for any statutory revisions necessary to implement the report's recommendations. DEP and SPO have convened the work group to evaluate the State's wetlands program. The work group will consider alternative approaches to improving State/Federal coordination, including an expanded State Programmatic General Permit administered by the U.S. Army Corps of Engineers. The work group consists of representatives from State and Federal agencies, members of the development community and environmental groups. The work group will be meeting monthly at least until January 1995. *(Contact: Don Witherill)*

F. GROUND WATER

1. General Assessment. The most significant causes for non-attainment of ground water classifications are:

- petroleum compounds from leaking underground and above ground storage tanks,
- other organic chemicals from leaking storage tanks or disposal practices, and

- bacteria from subsurface disposal systems or other sources.

Because of slow ground water flow rates and low biological activity, ground water contaminants are extremely persistent. Centuries may be required for natural processes to restore some contaminated ground water to potable standards.

Detailed quantitative estimates of the statewide extent of ground water contamination are not now, and may never be available. The time, costs, and technical requirements necessary to develop statewide estimates would be prohibitive. In addition, Maine's complex hydrogeologic setting makes representative ground water quality sampling difficult. The hilly topography and complex geology have created numerous localized ground water flow basins, "ground watersheds", which are similar to and often coincide with surface watersheds. As a result, water quality data obtained from monitoring wells indicate only the water quality at a specific location and depth in an aquifer. The data reflect the ground water quality upgradient, but they are not indicators of ground water quality elsewhere, either inside or outside a particular "ground watershed". Current information about State ground water contamination problems may not describe the actual situation as much as it reflects the reason for the investigation and the manner in which it is conducted, i.e., the contaminants tested for, where the monitoring occurred, and how it was performed.

Major impediments to effective ground water protection in Maine are:

1. absence of an accurate groundwater quality database to assess the extent of degradation,
2. lack of data to quantify the impact of some nonpoint pollution sources,
3. inadequate State and Federal funding for ground water research and ground water protection programs, and
4. general public unfamiliarity with key ground water concepts and issues.

Public misconception about ground water is probably the major factor contributing to degradation of this resource. The DEP will continue to work with EPA to address these issues through Maine's Comprehensive Ground Water Protection Program (CSGWPP).

2. Major Findings, Issues, and Activities in FY 1994

a. Comprehensive State Groundwater Protection Program.

The goal of the CSGWPP process, as seen by EPA, is to give each state the primary responsibility and flexibility in developing a comprehensive program that focuses on prevention of groundwater pollution and is structured around the goals of "preventing adverse effects to human health and the environment and protect the environmental integrity of the nation's groundwater." These goals are to be achieved through prevention, remediation, and management based on priority setting according to the relative use, value and vulnerability of the defined groundwater units.

Maine is in the process of developing a "core program," which involves EPA's determination of whether Maine meets the minimum level of

acceptability for the CSGWPP "Strategic Activities" and "Adequate Criteria," and also involves identification of gaps and redundancies in the state and federal processes for groundwater protection and management in Maine. Once this is complete, we can address correction of the gaps and other shortcomings (as we already are, to some extent, in the new rules), both intra- and inter- agency. If EPA accepts our core program, we then move on to the development of a "Fully-Integrating Program" which represents (ultimately) a comprehensive and fully developed groundwater protection strategy. *(Contact: John Hopeck)*

b. Ground Water Classification. Ground water in Maine is classified by its suitability for drinking water purposes. Under Maine law, ground water is classified as either potable (GW-A) or unpotable (GW-B). Water is unpotable when the concentrations of chemical compounds detected exceed either the Maximum Contaminant Levels (MCL) or the Maximum Exposure Guidelines (MEG) as defined by the Maine Department of Human Services (DHS). Although there are many localities where ground water is unpotable and highly contaminated, no ground water is currently classified GW-B. The state is not currently attempting to designate non-attainment areas. An attempt in 1993 to identify areas of degraded water quality in the town of Brunswick in preparation for a GW-B designation was postponed due to legal considerations.

The Bureau is in the initial stages of developing a system to prioritize groundwaters on a state-wide basis, according to their value for drinking water supplies; support of surface waters; risk of contamination, depletion, or other adverse impacts, and their support of other existing or potential uses. Funding under Section 319 of the Clean Water Act has been requested to support this work. Under the proposed program, linkage of known contamination sites, land-use activities, census data, watersheds of public water supplies, surface water classifications, and other data will be linked through GIS to identify priority groundwater areas, and allow the state to focus research, restoration activities, wellhead protection efforts, technical assistance, education and outreach programs, and other resources on those areas where specific needs and vulnerabilities have been demonstrated. *(Contact: John Hopeck)*

G. LAND USE ACTIVITIES

1. General Assessment

a. Nonpoint Source. Every time it rains or the snow melts pollutants such as dirt, sediment, nutrients, pathogens, oils, and heavy metals carried by runoff water are washed into our water resources from the land surfaces. As all pollutants accumulate from throughout a watershed, waters can become polluted. These nonpoint sources of water pollution include all our various land uses, such as urban, suburban, rural areas, agriculture, industry, roadways, waste disposal, forestry, etc., and even deposition of pollutants from the air. As DEP's 305(b) Report to Congress shows, nonpoint sources are a significant contributor to water quality impairment in the State of Maine.

The bureau is implementing the 1989 NPS Management Plan to encourage actions by governments, organizations, industry, and individuals to prevent or minimize the discharge of NPS pollutants into our waters. These

actions are referred to as Best Management Practices or BMPs. BMPs are practical, cost-effective siting, design, construction or operational recommendations to prevent or minimize discharge of pollutants from NPSs.

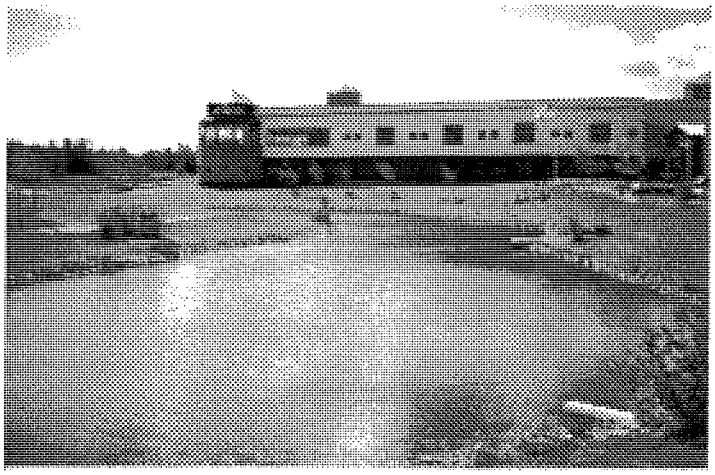
Bond Brook, Best Management Practice

This year the DEP was awarded two grants under Section 319 of the Federal Clean Water Act to coordinate efforts to encourage widespread implementation of BMPs. Program resources were assigned to foster both statewide efforts and to specific watersheds to improve and protect waters that are threatened or impaired due NPS pollution. The Bureau provided direct technical assistance and information/education to agencies, municipalities, businesses, and individuals about BMPs. The Bureau administers an NPS Implementation Grants program to provide financial assistance to sponsors that encourage or achieve implementation BMPs by conducting information and education outreach, BMP demonstration projects, watershed resource restoration projects, and watershed protection projects. For example, grant program funds supported the Bond Brook Watershed Restoration project sponsored by the Kennebec Soil & Water Conservation District. Outreach to local governments and residents built support for installing BMPs to help recover trout habitat in this formerly productive cold water fishery. An assortment of cost-effective BMPs were installed as demonstrations on how to abate significant NPSs throughout the watershed. *(Contact: Norm Marcotte)*

b. Licensing. In 1993 the DEP received 373 applications under the Site Location of Development Act and took 396 actions on applications; and received 349 applications under the Natural Resources Protection Act, and took 349 actions. The Department also received 2,565 notifications under the Chapter 305, Permit-By-Rule program in 1993. (See the Appendix for a complete list of types of Site and NRPA licenses received and processed, and a comparison to previous years.)

The Bureau continued to reduce its backlog of pending applications. At the end of FY 1994 the total pending for the division stood at 128 projects, down from 188 at the first of the year. The average processing time for a new, full, Site Location application, generally the most complex applications the division deals with, presently stands at approximately five

months. The average processing time for a new NRPA application is approximately three and a half months. *(Contact: Jeff Madore)*



Stormwater Detention Pond, L.L. Bean Freeport

c. Compliance and Enforcement. In 1992 the Land Bureau instituted a change in policy for enforcement for first-time NRPA violations. Where the environmental impact was minor and easily corrected, we would take a technical assistance approach: explain why the activity is an environmental problem, and how to correct it. Enforcement actions would be focused on repeat violations and/or serious environmental impacts. This was done under NRPA because of the broad impact of the law on the activities of individual citizens. The result of this change in approach has been improved environmental compliance, as well as a sharp decline in the number of enforcement actions and the penalties collected. Formal enforcement is initiated on about 5% of all cases; the remainder are resolved voluntarily.

The number of complaints received (members of the public reporting environmental violations) has continued to decline from 1158 in 1992 to 799 in 1993. (See the Appendix.) We have also increased the number (and percentage of the total) of cases taken to District Court under Rule 80K, .from 8 actions in 1992 to 13 in 1993. While many still settle without trial, more have been removed to Superior Court where our staff are no longer authorized to represent the State. The Bureau has begun training more enforcement staff to use 80K under the supervision of the regional office supervisors. With a larger force, we may be able to use the process more to our advantage as well as change our formal enforcement process to court action first, consent agreement second. *(Contact: Mike Mullen)*

2. Major Findings, Issues and Activities in FY 1994

a. Land Use Regulatory Reform. In the Fall of 1993, a Legislative Committee was convened to take a broad look at Maine's land use and natural resource management laws. The Report that came out of this effort expressed renewed commitment to the 10 goals of the Growth Management Act. In addition, while finding that the existing laws and programs generally functioned without much duplication and overlap, the Legislature found that there lacks an overall system for coordinating the programs and ensuring they were directed by common public policy goals.

For the DEP, there grew out of this report several actions that were begun in FY 1994 and will be a priority in FY 1995. These actions generally reflect a movement toward coordinating local planning and state permitting efforts, and helping the individual programs to function as parts of a whole. *(Contact: Jeff Madore)*

b. Coordinating Shoreland Zoning and Comprehensive Planning. The Legislature required DEP to work with the Department of Economic and Community Development's Office of Comprehensive Planning in an effort to ensure that the Shoreland Zoning Program works in concert with the goals of the Growth Management Act. The agencies are required to report back to the next Legislature on their progress and the need for any legislative changes to better integrate the two programs. *(Contact: Rich Baker)*

c. Planning and Permitting. The Land Use Regulatory Reform Committee's Report endorsed a pilot approach suggested by the DEP to coordinate planning and permitting in the Town of Topsham. This "Topsham Pilot", for which we received a small grant from NOAA, was begun in FY 1994 and will be a top priority for FY 1995. See below for a complete description of this project. *(Contact: Jeff Madore)*

d. Watershed Management. The Land Use Regulatory Reform Committee accepted a recommendation from the State Natural Resource Agencies to develop legislation to make it easier for towns to organize into watershed management districts (38 MRSA, Chapter 23). *(Contact: Don Witherill)*

e. Gravel Pits. Excavations for sand, gravel and fill, called borrow pits, are regulated under the Site Location of Development Law. In June 1993, the Legislature amended the Site Law requirements for medium-sized borrow pits. Previously, borrow pits of 5 acres or more required a Site Location license. Now all borrow pits between 5 and 30 acres are exempt from the full requirements of the Site Law, *provided* the owner or operator files a notice with DEP and complies with the new statutory performance standards. This procedure will save applicants the time and expense of filing a permit application with the DEP, while at the same time providing standards the excavation activity must meet. By meeting all the applicable performance standards, an applicant need only file a "notice of intent to comply" (on a form provided by DEP) before beginning the excavation activity.

During FY 1994 the DEP worked to implement the new program, developing educational materials and getting the word out to gravel pit owners and operators. The new program also gives an owner or operator until October 1, 1995, to correct any existing site deficiencies. To date, 200 operators have filed a Notice under the new program.

The Legislature recognized that compliance inspections by the DEP was critical to the success of this standards-based program. During hearings on the Legislation, the Department committed to inspecting at least 33% of the gravel pits each year. This function is funded through an annual fee from gravel pit operators. During FY 1994, the Department inspected 51 gravel pits. *(Contact: Mark Stebbins)*

IV. FY 1995 GOALS AND INITIATIVES

The Bureau's Goals for the coming year, and the major activities to support them, are set forth below. They generally reflect a move to coordinate regulatory and nonregulatory approaches, strengthen our scientific and information base, and improve our coordination with local governments and other state agencies. Some activities are intended to move the Bureau in new directions for achieving our objectives, whereas others are designed to improve our existing operations.

A. Goal: Strengthening Our Scientific and Technical Information Base

Initiatives:

1. Surface Water Ambient Toxics Monitoring Program. This program was enacted by the Legislature in 1994 and directs the Department to conduct comprehensive monitoring of the state's surface waters to determine the nature, scope and severity of toxic contamination. Over the summer we established a steering committee, required by the legislation, to oversee the methods and to advise on the selection of sampling sites and analyses. The program uses a variety of monitoring methods including measurement of contaminant levels in biological tissue, sediments and water; monitoring of the instream biological community structure; and the use of other indicators of toxic contamination. Sample collection began in the summer of 1994 focusing on river and coastal waters. Another program (REMAP) is presently describing toxic contamination in lakes. The first year of the SWAT program will look at 61 sites statewide focusing on heavy metals, pesticides, polychlorinated biphenyls, and polyaromatic hydrocarbons. Additional pilot studies will look at Velpar, chlorinated phenols, and development of liver cell culture technology. The program is being designed so that in following years monitoring will occur across the entire state and repetitive monitoring at selected sites will be used to assess trends in contaminant levels over time. Information gained from this program will be merged with other data from programs, such as REMAP and the Dioxin Monitoring Program, to give a more reliable picture of toxic contamination in our waters so we can set priorities and target our efforts to where they are most needed. *(Contact: Dave Courtemanch)*

2. Participation on the Maine Environmental Priorities Project. The Bureau is actively working with the Maine Environmental Priorities Project through their technical work groups. The MEPP provides an opportunity to evaluate critical environmental problems facing the State including threats to human health, ecological health and quality of life of Maine citizens, and to establish priorities for their resolution. The Bureau's contribution to this project is in the area of ecological health assessment. *(Contact: Dave Courtemanch)*

3. Building GIS Capacity. Geographic Information Systems hold a key to better natural resource management by enhancing the power and usefulness of data. Planning can be greatly facilitated by the integration of data available with GIS. As financial resources allow, the Bureau will emphasize increasing our GIS capabilities and building GIS into our programs. *(Contact: Kathy Jensen)*

4. Environmental Indicators. The way we manage the environment depends greatly on how we observe and measure it. Good management requires that we establish suitable goals. It is equally important that we establish reliable means to measure progress toward attainment of those goals. The Bureau has been working toward improvement of its measurement tools, particularly in the area of ecosystem response. The Bureau has recently received a special research grant from the USEPA to enhance our ability to interpret biological data through integration and analysis of GIS and other information bases. *(Contact: Dave Courtemanch)*

B. Goal: Watershed Management

We are learning that by focusing on whole ecosystems, rather than single media or single agency approaches, we can better leverage our resources -- public and private -- to provide the best protection for public health and the environment. This is in concert with a new strategy and policy from USEPA, which is based on an awareness that a media-by-media pollution control approach to environmental management alone has not been adequate to protect the complex and integrated functions of ecosystems.

To move the DEP firmly in the direction of watershed management, in January 1994, we established the Division of Watershed Management (DWM). The mission of the DWM is to "protect and improve the values of Maine's water and wetland resources by promoting environmentally sound land use throughout the watersheds of these resources. These values include water quality, water quantity, aquatic habitat, wildlife habitat, scenic quality, and floodwater storage and conveyance." *(Contact: Don Witherill)*

Initiatives:

1. Interdepartmental Coordination. To help coordinate the many on-going efforts in watershed management throughout the State, the DWM is developing a network of local, regional, state and federal agencies, as well as private organizations that are active in this arena. A meeting of many of these players, named "The Watershed Management Group" was held in July 1994. Future meetings are anticipated to be held on a biannual basis. *(Contact: Don Witherill)*

2. Androscoggin Watershed Pollution Prevention Initiative. This project, discussed in some detail in the Rivers Section above, will be a priority for the coming year.

C. Goal: Coordinating Planning and Permitting

An important area of emphasis for the Bureau will be to coordinate the water and land laws it administers with the 10 Goals of the Growth Management Act, and to find new ways to coordinate State environmental programs and local community growth management efforts.

Initiatives:

1. **Topsham Pilot Project.** The DEP, working in conjunction with the state departments of Economic and Community Development, Office of Community Development, Inland Fisheries and Wildlife, Transportation, the State Planning Office and the Town of Topsham, has proposed the creation of a development plan for the designated areas in the Town of Topsham affected by the Brunswick/Topsham Bypass Project. The project's purpose is to plan development locations and capacities, target needed investments and to eliminate or reduce the need for state environmental permits under the Site location of Development Law and the Natural Resources Protection Act and local land use development permits. The approved construction of the Brunswick/Topsham bypass will increase development pressure in the adjoining area. Traditionally, such activities are regulated piecemeal by the Towns and the various State agencies, on a project-by-project basis. This proposal will assess an alternative approval process for planned and managed growth that helps the economy, protects natural resources, and streamlines the regulatory process. The broader implication of this proposal is to generate a model for regulating the environmental consequences of development within designated growth areas of municipalities certified under the State's Growth Management Program (Title 30-A, Chapter 187, Subchapter II). The Department has received a grant from NOAA to pilot this approach. It is hoped that this will result in a new direction for coordinating environmental permitting and land use planning in Maine. *(Contact: Jeff Madore)*

2. **Shoreland Zoning and Comprehensive Planning.** Working with the Office of Comprehensive Planning to integrate these two programs will be a Bureau priority for this fiscal year. *(Contact: Rich Baker)*

D. Goal: Continuous Quality Improvement in Current Operations.

The primary focus of these efforts will be on improved coordination with state, federal and local governments to reduce duplication, increase efficiency and enhance quality.

Initiatives:

1. **NPDES Delegation.** The Maine DEP is now actively working on the necessary elements to request delegation of the NPDES federal wastewater discharge licensing program from EPA. Delegation of the wastewater licensing program would significantly reduce the time and expense for municipalities and businesses that have to get both state and federal permits under the current system. The DEP has made a preliminary analysis of the necessary regulatory and legislative changes needed to submit a request for delegation to USEPA. In the Fall of 1994, the DEP will establish an advisory team comprised of the members of the regulated community and environmental advocacy groups to provide guidance and comments to the DEP as this effort progresses. *(Contact: Dennis Merrill)*

2. CWA Reauthorization. The provisions of the Federal Clean Water Act have a direct impact on Maine's water quality protection programs. The DEP will continue to monitor Congressional efforts to reauthorize the Federal Clean Water Act and provide input through the various channels available. *(Contact: Mickey Kuhns)*

3. Wastewater Discharge Licensing Process Improvements. The Division of Water Resource Regulation is currently reviewing the processing procedures for an application for a Wastewater Discharge License. Much of the analysis involves the in-house processes which have evolved over the past ten to fifteen years. Some of the steps have been found to be unnecessary and have been eliminated. Another improvement has been in the quality of the information in the application database. With much more accurate information on pending applications, the staff can process applications more efficiently and plan workloads more effectively. We expect more such improvements to be made in the next six to twelve months. *(Contact: Dana Murch)*

4. Overhaul of Site Location, NRPA, and Water Regulations

a. Site Location. Over the past year, staff have expended considerable efforts compiling the first major overhaul of the Department's Site Law regulations since these regulations were first adopted. These regulatory revisions are intended to clarify and improve the Site Location review process. Significant areas subject to change by the draft regulations include: clarification of jurisdictional issues; new permitting options such as reduced procedures and planning permits; consolidation and clarification of environmental criteria; totally revised chapters dealing with gravel pits and blasting operations. Staff have held a number of work sessions on these regulations both internally and with the regulated public. Final revisions to the regulations are being completed and a final version is expected to be posted to public hearing during fall 1994 with formal adoption by the end of the year. *(Contact: Hetty Richardson)*

b. NRPA. A similar effort to improve the clarity and ease of use has also been instituted for regulations under the Natural Resources Protection Act. This effort has also seen considerable progress over the past year. A draft has yet to be fully compiled to allow for public workshops, but one is anticipated for the fall of 1994. Final action on these rules is anticipated for early Spring, 1995. *(Contact: Hetty Richardson; Bill Laflamme)*

As a result of legislation this past session, the Bureau is required to initiate rulemaking under the permit by rule program. Specific issues to be addressed include: allowances for construction activities in the back dunes of coastal sand dune systems and allowances for repair or replacement of up to 50% of permanent structures below and above the high water line within protected natural resources. A staff working group has been assembled to review other aspects of the NRPA process and may be proposing additional modifications or additions to the program. *(Contact: Mike Mullen)*

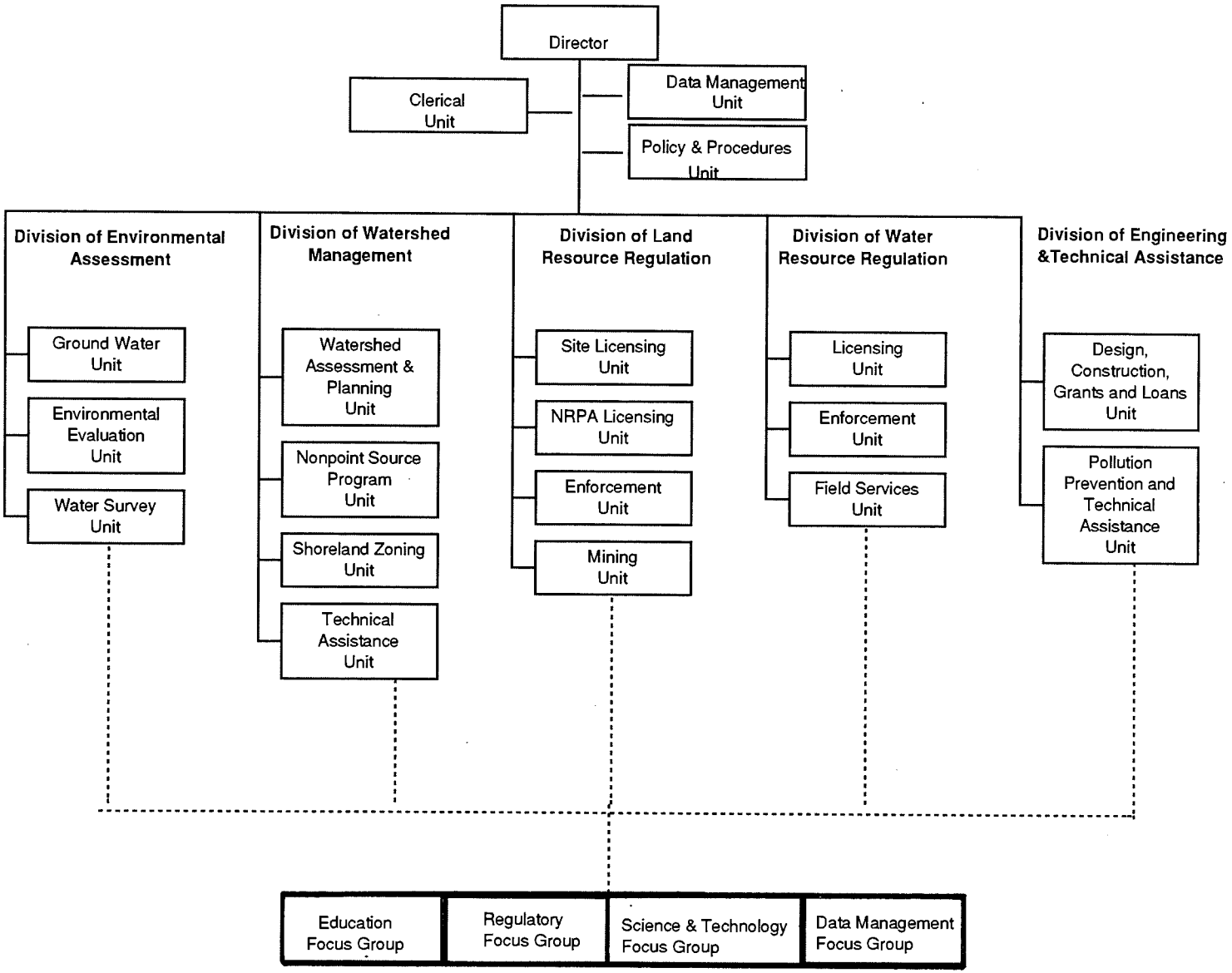
c. Water Regulations. During the past year the Bureau sponsored two workshops on its draft set of rules, a proposed revision of all rules relating to protection of surface waters. In addition to this revision,, the draft set contains several new rules having to do with licensing of discharges,

antidegradation of water quality, best practicable treatment, mixing zones, etc. Oral comments at the workshop and written remarks received subsequently are being considered and incorporated into the draft rules as appropriate. After further internal review and, perhaps, another workshop, the rules will be taken to public hearing in the Fall or Winter of 1994-95. *(Contact: Don Hague)*

5. Sawmill Initiative. Pursuant to a Legislative Resolve enacted in 1994, DEP has begun a collaborative process with the sawmill operators to identify issues of concern in site location, solid waste disposal, air and water quality for sawmills, and to recommend ways to improve the process while ensuring that environmental standards are met. *(contact: Jeff Madore)*

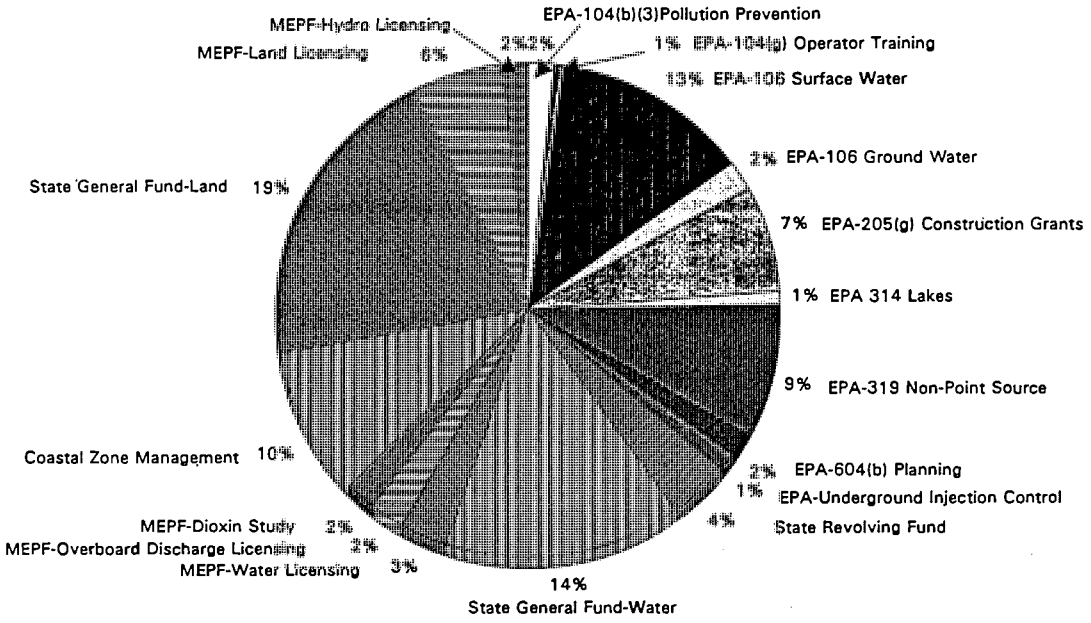
Appendices

Bureau of Land and Water Quality



Federal Fiscal Year 1994 (Oct. 1, 1993 - Sept. 30, 1994)

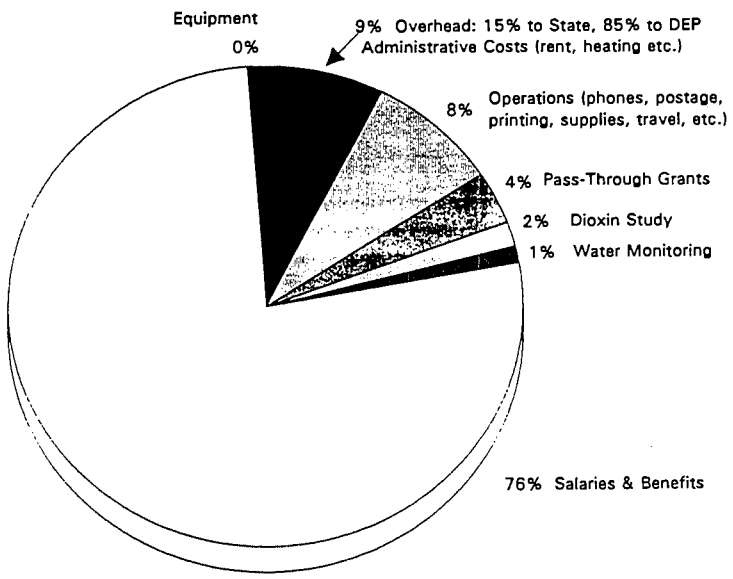
Bureau of Land and Water Quality
INCOME
$5,865,869



Federal 48%
State 39%
Licensing Fees ... 13%

Bureau of Land and Water Quality
EXPENSES

$6,906,867*



*Expenses in excess of income are funded through noncontinuing project grants.

MUNICIPAL GRANTS & LOANS
Projects Completed and On-Line
FY 94

TOWN	FUNDING SOURCE	WATERBODY
Bangor	SRF Loan	Penobscot River
Brunswick (Mere Point)	Grants	Maquoit and Mere Point Bays
Eastport	Grants	Cobscook Bay
Farmington	SRF Loan and Grant	Sandy River
Kittery	SRF Loan	Piscataqua River
Lewiston-Auburn WPCA	SRF Loan	N/A
Lubec	Grants	Cobscook Bay
Mars Hill U.D.	Grants	Prestile Stream
Norridgewock	Grants	Kennebec River
Patten	Grants	Fish Stream
Portland (Peaks Island)	Grants	Casco Bay
Rockport	Grants	Clam Cove and Rockport Harbor
St. Agatha S.D.	Grants	Long Lake
Stonington	Grants	Stonington Harbor
Westbrook	SRF Loan	N/A
York S.D.	SRF Loan	Cape Neddick Harbor

FY94 SMALL COMMUNITY GRANTS

Addison	$ 6,672.00	Merrill	$ 6,572.00
Aroostook County	$34,656.00	Mexico	$ 6,763.00
Blaine	$23,529.00	Milbridge	$26,070.00
Bridgewater	$17,726.00	Milford	$ 9,134.00
Burnham	$ 8,615.00	Monticello	$24,660.00
Caribou	$15,822.00	New Limerick	$21,361.00
Carmel	$16,071.00	New Sharon	$ 2,498.00
Cherryfield	$19,755.00	New Vineyard	$ 7,280.00
Clifton	$ 4,248.00	Oakfield	$10,975.00
Cooper	$ 5,410.00	Parsonsfield	$ 7,869.00
Cyr Plt.	$ 2,612.00	Perham	$31,124.00
Deer Isle	$ 8,383.00	Peru	$14,915.00
Dyer Brook	$ 427.00	Phillips	$ 6,438.00
Eagle Lake	$22,928.00	Pittsfield	$ 7,560.00
Eustis	$ 5,299.00	Portage Lake	$39,021.00
Frankfort	$ 3,890.00	Portland WD	$22,597.00
Freedom	$ 3,532.00	Presque Isle	$17,715.00
Frenchville	$15,457.00	Robbinston	$ 4,405.00
Ft. Kent	$10,555.00	Rockport	$13,275.00
Grand Isle	$13,491.00	Searsport	$ 3,593.00
Greene	$11,812.00	Sedgwick	$ 9,619.00
Hancock	$ 5,107.00	Sherman Mills	$28,616.00
Harpswell	$ 442.00	Smyrna	$25,767.00
Harrington	$20,401.00	St Agatha	$ 3,348.00
Jonesboro	$ 7,282.00	St. Albans	$18,339.00
Jonesport	$ 4,170.00	St. George	$25,181.00
Kenduskeag	$38,814.00	St. John Plt.	$10,626.00
Lincolnville	$ 1,254.00	Stacyville	$30,685.00
Linneus	$14,997.00	Steuben	$18,438.00
Lubec	$14,160.00	Stockton	$14,764.00
Machias	$ 5,936.00	Strong	$ 3,978.00
Machiasport	$10,119.00	Wallagrass	$39,029.00
Madawaska	$17,240.00	Washburn	$25,511.00
Madison	$ 5,220.00	Weld	$ 3,525.00
Mapleton	$ 4,550.00	Westfield	$22,283.00
Mars Hill	$ 8,115.00	Westmanland	$ 8,828.00
		Wilton	$ 3,723.00
	TOTAL		**$984,783.00**

FY 94
CSO PLANNING GRANTS

Bar Harbor	$ 26,500.00
Bucksport	$ 2,219.00
Castine	$ 3,800.00
Kittery	$ 2,950.00
Lincoln S.D.	$ 30,213.00
Livermore Falls	$ 942.00
Madawaska	$ 38,298.00
Mechanic Falls S.D.	$ 19,891.00
Oakland	$ 11,962.00
Orono	$ 25,250.00
Saco	$107,286.00
TOTAL	**$269,311.00**

FY94 OVERBOARD DISCHARGE GRANTS MADE BETWEEN 7-1-93 AND 6-30-94

City Name	Sum Grant
Addison	$ 70,000.00
Bar Harbor	$ 10,000.00
Beals	$ 50,000.00
Boothbay	$ 40,000.00
Brooklin	$ 10,000.00
Brooksville	$ 70,000.00
Calais	$ 30,000.00
Cumberland	$ 15,000.00
Deer Island	$ 50,000.00
E. Boothbay	$ 2,422.00
Edgecomb	$ 10,000.00
Franklin	$ 10,000.00
Freeport	$ 70,000.00
Gouldsboro	$ 50,000.00
Harpswell	$ 15,000.00
Islesboro	$100,000.00
Machiasport	$ 10,000.00
Milbridge	$ 20,000.00
North Haven	$ 10,000.00
Penobscot	$ 40,000.00
Perry	$ 10,000.00
Phippsburg	$ 40,000.00
Piscataquis CC	$ 20,000.00
Robbinston	$ 30,000.00
Steuben	$ 12,000.00
Stonington	$ 20,000.00
Sullivan	$ 20,000.00
Surry	$ 50,000.00
Trenton	$ 20,000.00
Vinalhaven	$ 3,825.00
Yarmouth	$ 10,000.00
TOTAL	**$918,247.00**

NUMBER OF APPLICATIONS RECEIVED 1981 - 1993

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Wastewater Discharge	0	0	1	103	193	93	108	86	88	95	68	55	56
Overboard Discharge	113	145	183	489	868	536	388	151	304	253	253	158	119
Site Location	302	314	201	246	287	429	450	419	418	371	352	387	373
Coastal Wetlands		206	203	130	211	244	270	296	294	217	237	156	97
Freshwater Wetlands	0	0	0	0	2	12	4	18	34	62	69	85	90
Great Ponds	255	189	261	330	332	250	219	179	146	107	63	32	38
Sand Dunes	0	0	0	58	86	155	178	124	87	72	91	66	45
Stream Alteration	0	0	0	0	50	130	168	213	161	143	80	86	76
Hydro	3	10	0	32	51	35	47	33	20	34	60	29	41
Fragile Mountain Areas	.0	0	0	0	0	0	0	0	0	0	0	2	3

Number Of Actions Taken In Fiscal Year 1994

Type	Total Actions	Approved	Denied	Returned	Withdrawn	Exempt
Wastewater Discharge	57	47	0	6	4	0
Overboard Discharge	243	200	0	0	43	0
Site Location	380	344	3	15	6	12
Coastal Wetlands	89	79	1	1	2	6
Freshwater Wetlands	82	65	0	12	4	1
Great Ponds	31	27	0	4	0	0
Sand Dunes	38	24	0	1	1	12
Stream Alteration	78	62	2	9	2	3
Hydro	31	19	0	0	12	0
Fragile Mountain Areas	2	2	0	0	0	0
Totals	**1031**	**869**	**6**	**34**	**48**	**74**

PERMIT-BY-RULE ACTIVITIES

ACTIVITY	# OF REQUESTS PROCESSED IN 1993
Crossings	72
Disturbance of soil material adjacent to a waterbody or wetland	983
Fish & Wildlife creation, enhancement & water quality	18
Intake pipes and water quality monitoring	59
Maintennance, repair and replacement of structures and wstewater disposal systemsq	490
Maintennace Dredging	5
MDOT general permits	44
Moorings	17
Movement of rocks and vegetation by hand	65
Outfall pipes	69
Piers, Wharves, & Piling	134
Public Boat Ramps	12
Restoration of natural areas	51
Riprap	260
Select Sand Dune Projects	13
Stream crossings	265
Transfers	8
Total	**2565**

CITIZEN -REPORTED ENVIRONMENTAL PROBLEMS
1993

	Received	Resolved	Pending
Land	799	649	150
Water	116	51	65
TOTAL	**915**	**700**	**215**

FORMAL ENFORCEMENT ACTIONS FOR LAND AND WATER
1993

Consent Agreements	37
80K District Court	14
Superior Court	3
TOTALS	**54**

BUREAU OF LAND AND WATER QUALITY

PUBLICATIONS

DIVISION OF ENVIRONMENAL ASSESSMENT (DEA)

1989 Maine Ground Water Management Strategy
Acid Rain (5 boxes in the file room) - 1992
Acidic Deposition and Aquatic Ecosystems
America's Clean Water Act
Chapter 584 - Surface Waters Toxic Control Program
China Lake Syndrome - 2 page handout - printed in the 1980's
Clean Water Strategy - 1990 - will not be reprinted
Comprehensive Surface Water Ambient Toxic Monitoring Program - 1993
Dioxin Monitoring - 1991, 1993
Environmental Resources of Maine - May 1993 - DEP
Evaluation of Gulfwatch 1992-second year of the Gulf of Maine Monitoring Plan
Fishable/Swimmable (1 page) - 1980's
Foam (1 page) - 1980's
Freshwater Jelly Fish in Maine - (1 page) - 1980's
Ground Water (Facts for Maine Residents - 1993
Ground Water (Facts for Municipal Officials) - 1993
Groundwater - 1993 - USGS
Groundwater Book Covers - 1992
Groundwater Poster - 1992
Gulf of Maine Data and Information Management Workshop-1993
Implementation Strategies For Lake Water Quality Programs
Lake Watershed Evaluation and Tracking (Dedham) - May 1992 - DEP and Hancock County
Lake Watershed Surveys - 1992 - Maine DEP and COLA
Leeches (1 page handout) - 1980's
Long Lake Watershed - 1989
Maine Legislature Commission of Maine Lakes - 1991
Maine Marine Environmental Monitoring Program (12p)-1993
Maine Stream Water Quality
Managing the Impact of Development on Lakes
Measures of Lake Water Quality
Modeling Benthic Impacts of Organic Enrichment from Marine Aquaculture-1994
Nutrient Loading Impacts - 1986
Phosphoric Content of Soap (1 page hand out) - 1980's
Proposed Approach Towards a Coastal Nutrient Management Program for Maine
Report of Sebago Lake Water Levels - March 1992
River and Stream Volunteer W.Q. - 1992
Stop the Spread of Nuisance Aquatic Plants - (1 sheet) - 1989
Swimmer's Itch (1sheet of paper) - 1972
The Clean Water Game (pamphlet) - will not reproduce once they are gone
The Planning Process for Local Goundwater Protection
The Status and Future of Pen Culture in Maine-1993
Those Frustrating Flora - 1992
Threats to Groundwater in Maine - Map - question as to whether we reorder or not
Understanding Maine Lakes and Ponds (Red Book) Lay Monitoring - will reproduce
Water Classification Program (Blue Book) - reprinting
Water Quality Assessment - 305B being reproduced - June 1994
Zooplankton - The Critical Link (1 page) - 1980

DIVISION OF WATER RESOURCE REGULATION

An Act to Amend the Overboard Discharge Laws - 1989
Chapter 588 - WDL By Rule Standards
Chapter 596 - OBD Relicensing Transfer and Abandonment of License

Clarification Cards for OBD Law, 1990 Issue Profile
DEP Issue Profile Regulations of Dams - 1993
FERC Approved Hydropower Projects in Maine - June 1992
Issue Profile (overboard discharges) - 1993
Issue Profile (underground injection control) - 1990
Owners and Operators Manual (Septic Systems and Sand Filter)
Regulations of Hydropower in Maine - July 1990
Regulations of Water Levels and Minimum Flows - Ocotober 1993
Sand/Salt Priority List - 1987
Septic Systems (2 boxes in the file room) - 1990's
Sewer Rate Survey - 1988
Treat It Right (Alternative Wastewater Systems That Protect Water Quality) (3 boxes in the file room) - check with DWRR licensing staff before handing out

DIVISION OF WATERSHED MANAGEMENT

Coastal Nonpoint Source Pollution
Comprehensive Planning
Guidelines for Municipal Shoreland Zoning Act - July 1992
Issue Profile (NPS Pollution Control) - 1989 - New one being worked on
Issue Profiles (clearing of vegetation in the shoreland zone) - 1993
Issue Profiles (mandatory shoreland zoning act - 1993
NPS Times - 1993
Nonpoint Source Pollution Management Plan - 1989
Watershed (An Action Guide to Improving Maine Waters) - April 1990

EDUCATION (Barb Welch)
Acid Rain and Maine Lakes - 1992
Book Marks (Lake Week) - question on reordering these.
Bumper Stickers (Clean Water)
Clean Water Our Precious Resource
Comprehensive Planning for Lake Protection (1 box in the file room) - 1990 - Androscoggin Valley SWCD and Maine DEP
Controlling Lake Phosphorus From Existing Sources (7 boxes in the file room) - 1990's
Endangered and Threatened Animal Species - 1990 - Coloring Book
Environmental Management (15 boxes in the file room) - 1992 - April
For Your Lake's Sake (pamphlet) - just ordered - June 1994
Maine Lake Protection (Using the Phosphorous Control Method to Improve a Subdivision) (1 box in the file room) - 1990's
Phosphorus Control in Lake Watersheds - Revised 1992
Protecting Maine Lakes (An Overview) - 1990's
Protecting Maine Lakes From Phosphorus Pollution (1 box in the file room) - 1990's
Streams (7 boxes in the file room), (handout) - 1992
Stream Inserts (2 boxes in the file room), (handout) - 1992
Town Ordinances for Protection Maine Lakes

DIVISION OF ENGINEERING AND TECHNICAL ASSISTANCE (DETA)
Chapter 594 - State Revolving Loan Fund
Chapter 595 - State Revolving Loan Fund
Combined Sewer Overflows - 1992
FY 1993 Intended Use Plan-August 1993
Overboard Discharge Grant Program - April 1994
Small Community Grant Program, Municipal Handbook - April 1994
Small Community Grant Program-1994 Priority List
Small Community Grant Program-Municipal Handbook-June 1994
State Construction Grants Projects-August 1993
Wastewater Facilities Construction Program-August 1993
Wastewater Facility Construction Program - April 1993
What is the MWPP Proram? - April 1992 (EPA)